

What is claimed is:

1.

A promoter sequence capable of directing expression of a nucleotide sequence in a plant cell, said sequence comprising:

a ubiquitin promoter sequence, wherein said sequence includes a modification so that it does not include two overlapping heat shock elements.

2.

The promoter sequence of claim 1 wherein said sequence includes a single heat shock element.

3.

The promoter of claim 1 wherein said heat shock element comprises the sequence:

CTGGACCCCTCTCGA.

4.

The promoter sequence of claim 1 wherein said heat shock sequence is CTCGAGAGTTCCGCT.

5.

The promoter sequence of claim 1 wherein said sequence comprises two adjacent heat shock elements.

6.

The adjacent heat shock elements of claim 5 wherein said heat shock elements comprise the following sequence:

CTGGACCCCTCTCGACTCGAGAGTTCCGCT.

7.

The promoter sequence of claim 1 wherein said sequence includes no heat shock elements in the heat shock element region.

8.

The promoter sequence of claim 1 wherein said sequence includes a deletion of the overlapping HSE at position -204 - -190.

9.

The promoter sequence of claim 1 further comprising a DNA binding factor or transcription factor.

10.

The promoter sequence of claim 1 wherein said transcription factor is selected from the group consisting of PsiI, EBP, HY5, BLZ-1, Gamyb, RF2a, ROMI, G-7-1, SPA, Dof2, and Opaque.

11.

The promoter sequence of claim 10 wherein said PsiI element comprises the sequence GACACGTAGAATGAGTCATCAC.

12.

The promoter sequence of claim 11 wherein said element is a trimer.

13.

An expression construct comprising:  
a nucleotide sequence according to claim 1, operatively linked to a structural gene.

14.

A vector capable of transforming or transfecting a host cell, said vector comprising an expression construct according to claim 13.

15.

The vector of claim 14 wherein said vector is a plasmid based vector.

16.

The vector of claim 14 wherein said vector is a viral based vector.

17.

A prokaryotic or eukaryotic host cell transformed or transfected with a vector according to claim 14.

18.

The host cell of claim 17 wherein said cell is a plant cell.

19.

A method for causing expression of a structural gene or open reading frame in a plant cell, said method comprising: introducing to a plant cell an expression construct comprising a ubiquitin promoter sequence, said sequence having been engineered so that it does not comprise two overlapping heat shock elements.

20.

The promoter sequence of claim 19 wherein said sequence includes a single heat shock element.

21.

The sequence of claim 20 wherein said heat shock element comprises the sequence:  
CTGGACCCCTCTCGA.

22.

The promoter sequence of claim 20 wherein said heat shock sequence is CTCGAGAGTTCCGCT.

23.

The promoter sequence of claim 20 wherein said sequence comprises two adjacent heat shock elements.

24.

The promoter sequence of claim 23 wherein said heat shock elements are of bacterial origin.

25.

The promoter sequence of claim 23 wherein said heat shock elements are from a plant source.

26.

The adjacent heat shock elements of claim 23 wherein said heat shock elements comprise the following sequence:  
CTGGACCCCTCTCGACTCGAGAGTTCCGC.

27.

The promoter sequence of claim 19 wherein said sequence includes a deletion of the overlapping HSE at position -204-  
-190.

28.

The promoter sequence of claim 27 further comprising a seed specific factor.

29.

The promoter sequence of claim 19 wherein said seed specific factor is a PsI element.

30.

The promoter sequence of claim 29 wherein said PsI element comprises the sequence GACACGTAGAATGAGTCATCAC.

31.

The promoter sequence of claim 30 wherein said element is a trimer.

32.

The promoter sequence of claim 1 wherein said promoter is capable of driving expression to the leaf.

33.

The promoter sequence of claim 1 wherein said promoter is capable of driving expression to the root.

34.

The promoter sequence of claim 1 wherein said promoter is capable of driving expression to the seed.

35.

The promoter of claim 34 wherein said expression is endosperm preferred expression.

36.

A promoter sequence capable of directing expression of a nucleotide sequence in a plant cell comprising:  
a ubiquitin promoter sequence, wherein said sequence includes a modification so that said promoter directs expression to increase the endosperm/embryo expression ratio of said protein when compared to the ratio from a wild-type ubiquitin promoter.

37.

An engineered ubiquitin promoter comprising a deletion of the 3' heat shock element.

38.

An engineered ubiquitin promoter comprising a deletion of the 5' heat shock element.

39.

An engineered ubiquitin promoter comprising two adjacent heat shock elements.

40.

An engineered ubiquitin promoter comprising a deletion of the 5' and 3' heat shock elements.